a density of constant population for the whole territory, one might admit a total figure of 10,000 inhabitants at the time of discovery, corresponding to 2,000 or 3,000 today, and probably even less. Our itinerary had been drawn up with the main purpose of putting us in contact with the greatest possible number of Indians. After five months of traveling across their territory, we had only encountered 200; that was the actual mean of a single Nambikwara band twenty years ago. Today the nomad band consists of from 4 or 5 to 30 or 40 members. This demographic decrease is explained by the introduction of diseases of other races after the first penetration of the territory in 1907. The few numerical data which it was possible for us to collect will dispense with all commentary. Fifteen years ago, the known fraction of the Sabané group numbered more than 1,000 individuals; when the group visited the telegraph station of Campos Novos in 1928, there were counted 127 men plus women and children. In November of 1928 however, an epidemic of grippe broke out, when the group was camping at a place known to the telegraph employees by the name of Espirro. The illness rapidly evolved toward a form of pulmonary oedema, and 300 Indians died in 48 hours. The whole group disbanded, fleeing the malady and leaving behind the sick and dying. Of the 1,000 Sabané formerly known, only 19 men survived along with their wives and children. Besides the epidemic it should be added, to explain these astounding figures, that the Sabané were at war several years ago with certain eastern neighbors (group a2) (1).

1. See the classification of the Nambikwara group, below, p. 10 f.

But a large group of dialect b2, installed not far from Tres Buritis, was completely liquidated by the grippe in 1927 except six or seven persons of whom only (2) three were still living in 1938. The Tarundé

2. See below, p. 51.

group, [7] formerly one of the most important, still had 12 men (besides women and children) in 1926; of these 12 men, 4 only were living in 1939.

A southern group of dialect b1 (Kabişi) seems to have resisted better; undoubtedly because their contacts with the people of the Line are rare. From 1929 to 1934, no Kabişi had been seen along the telegraph line. The Indians perhaps circulated more to the south

115 and only reveals her happy nature on occasions of songs and dances where
157 she excels. One always sees her occupied by some craft work which she seems to prefer—shaping or polishing disks of shells, drilling them through or filing them, rubbing earrings or bracelets. She talks little, letting herself be completely absorbed by her work. She is a wife and mother, and a remarkable informant for all details of the material culture.

a12. --Daughter of the preceding two, approximately 22 years; she is the wife of A73 who abandoned her to live with two women a74 and a75. Because of this, she returned to the charge of her parents, the more so because she is pregnant. She is placid, smiling and apathetic. She is separated from collective life by her condition
● [164] and by a painful eye infection which struck her first among the members of her group of which several were later attacked by the epidemic.

A13. --About 40 years of age. Son of A18, "brother," consequently, of a2, "brother-in-law" of A1, whose older sister a14 he married. Always joyful, active and docile, he is the confidence man of A1, his preferred messenger, the companion he chooses for all complicated undertakings. He is industrious, a [44] not affected in his attitudes, and, as an informant, compliant, very verbose and not always clear or comprehensive.

a14. --About 40 to 45 years. Wife of the preceding, blood sister of A1, mother of A16. She is influential, active, diligent, at first quite rude, but in reality pleasing and competent. She exercises real authority over the other women of the group by her spirit of initiative and her pep. She is the grandmother of a8 and of a9 whom she feeds and whom she cares for frequently. Not only is she a good informant, but she sometimes takes didactic initiative. She loves songs and dances.

[608] A15. --About 15 years. He is an orphan; his father was the brother of A13 who took him in. A gentle, tranquil, rather timid boy.

A16. --7 or 8 years; son of A13 and of a14, "husband" of a5. He is a lively and curious child; his mother rarely refuses him anything, and he tyrannizes her willingly. She is very proud of him and overlooks many of his whims. One day she came to ask us to teach him to read. The attempts are not very encouraging. He looks upon the lessons as a game and refuses to learn the letters as determined forms; for him they are interchangeable, and he attributes to them in turn all the sounds which he has in his vocabulary.

115 A17. --Between 50 and 55 years, he is the dean of the group; he
157 is conscious of this and gets a certain pride from having around him
602 only "sons" or "daughters," "sons-in-law" and "daughters-in-law,"

sionaries had not yet learned enough Iranxe to make working with informants possible.

As all of the following information, unless otherwise specified, relates to the Waklĭtisu band, a short description of this band is in order. Today the band consists of 18 individuals, of which Julio is the chief. About 5 years ago, before a measles epidemic decimated it, the band was roughly twice the size it is today. Julio is a man of middle age, has three wives and two children, and probably holds his leadership by being the strongest and ablest man in the band. Except for one of Julio's wives and her daughter who are Elótasu, the members of the band are Waklĭtisu and related to one another. Julio took the Elótasu woman from the Elótasu band by killing her husband. He claims he did this because the Elótasu chief stole one of his wives some years ago. He claims he is going to steal another wife, for every chief is supposed to have four. Only three other men, Martin, Marciano, and Joaquin, are married, each having one wife. The remaining four are either widowers or as yet unmarried.

Of all the Indians which I have visited in Mato Grosso the members of this band of Nambicuara were the most miserable. Of the eight men, one had syphilis, another had some kind of infection in his side, another had an injured foot, another was covered with some kind of scaly skin disease from head to foot, and another was deaf and dumb. The women and children, however, appeared to be healthy. Owing to the fact that they use no hammocks but sleep on the ground, they are always covered with dirt. On cold nights they remove the fires and sleep in the warm ashes. The Waklĭtisu wear clothes only when they are given by the missionaries, who ask that they be worn. Their distaste for bathing permits not only a covering of dust and ashes to accumulate on their skin and hair but also particles of decayed meat and fish, which, combined with stale sweat, makes proximity to them rather distasteful. They also appear to be heavily infected with internal parasites, for their stomaches are distended and they are continually passing wind. On several occasions when a number of them had crowded into the small room we used for working we had to cease work in order to air the room.

In their manners the Nambicuara also contrast sharply with the other tribes I visited. The

621 security and marital possibilities are endangered it will unite with some other band.

161 According to the missionaries who live in the area, the number of individuals in each band of the Eastern Nambicuara are as follows: Waklítisu, 18; Kitánhlu, 45, Elótasu, 17; Chiwáisu, 50. Old census figures give the population of the Western Nambicuara as 500, but the missionaries assured me that they doubted whether even half as many exist today. It must be remembered that an epidemic of measles or "grippe" can diminish the population very rapidly. Syphilis and tuberculosis also exist among them. Judging from the physical appearance of the individuals and their general attitude toward life, it appears that the Eastern Nambicuara, at least, are dying out rapidly.

[164]

114 According to Roquette-Pinto, perhaps the earliest visitor to the territory now occupied by the Nambicuara was Antonio Pires do Campo, who went north up the Sepotuba River, which he called Hisipotuba, between 1718 and 1723, and in all likelihood reached the headwaters of the Sacre and Papagaio Rivers. In his Breve Noticia published in 1746, he mentions the Caviro Indians living in the valleys of the rivers running northward into the Amazon River.

Some years later Padre Ayres de Casal mentions a tribe living on the Juruena River, a territory long occupied by the Nambicuara. From 1800 on, rumors about the Indians living in this area increased. In 1862, Dr. Amedée Moure published a monograph on the Indians of Mato Grosso in which he devoted a chapter to the 10 savage, man-eating tribes, among whom he listed the Umotina, Cabixí, Nambicuara, and the Tapanuma (Roquette-Pinto, 1938, pp. 26–51).

The first reliable accounts of the Nambicuara date from 1907 to 1912, the period when General Rondon was putting up the telegraph line between Cuiabá and Porto Velho. In 1912, Roquette-Pinto visited the Nambicuara and the Paressí, and later published the results of his investigations in his book entitled "Rondonia." This book undoubtedly is the first anthropologically competent report about the Nambicuara. After 1910, small Government Indian Posts were established, one at Tolosa on the upper Cravarí River, a short distance east of Utiarity, and another called Pyreneus de Sousa between Campos Novos and

648

145 It seemed to me that these people get their full set of teeth much earlier.

Those molars which are popularly called wisdom teeth, and which are tending to disappear in the white race, are no mere ornaments among the Indians. They are endowed with significant size and function.

264 I believe that the excessive amount of work required of their
145 digestive system is reflected in these dental characteristics. The large molars appear earlier because they are needed for frequent and powerful mastication.

262 They always eat of everything, without discrimination or restraint. To my knowledge, there is no animal they will not eat. They discard only the intestinal tract of the game they kill.

[194] The Indians of the Juruena River consume more meat than the
[514] others; those from José Bonifácio eat more manioc and maize. Their intestinal gas makes their company unpleasant. They all have furred
164 tongues, and many have gums affected by alveolar piorrhea. Their teeth, contrary to frequent cases among the Sambaqui skulls, do not suffer from the state of wear which Lund described in 1842 for Lagoa Santa man; but they suffer from caries which do not spare the crowns.

A special skin disease prevails among the Indians of the Serra do Norte. (1)

[113]

1. See E. Roquette-Pinto, Lectures at the Biblioteca Nacional [National Library] on March 15, 1913, and at the Sociedade Brasileira de Dermatologia, Policlinica Geral do Rio de Janeiro [Brazilian Dermatological Society, Main Polyclinic of Rio de Janeiro], on June 11, 1912.

[181] Actually, some officials of the Rondon Commission had noticed the characteristic scabs of the disease. Owing perhaps to a lack of typical cases such as I witnessed, however, they took the spots
[513] to be mere skin exfoliations caused by the friction of the body on the ground, where the Serra do Norte Indians sleep.

164 But when I examined those individuals whose photographs [sic] are shown here, I verified the existence of a true skin disease, similar to several others which are found among our aborigines.

The disease appears at all ages; it was found among nursing children as well as old people, and both sexes are affected.

It appears to be more common among the Indians of the Juruena and Juina rivers. The Paresi, their near neighbors, do not know the disease; and I did not hear of any case among the personnel of the Telegraph Line.

No part of the body is spared except the scalp. The nails are exempt, and the face is seldom affected.

The disease is not rare, and it is easy to see traces of its presence on many of the Indians. However, I believe that the intensity of its development is quite variable, for I could verify its well defined symptoms in only eight out of some 400 Indians.

This skin disorder has three successive clinical stages, and one individual may exhibit lesions belonging to different stages. Some scabs show transitional forms.

In its first stage the disease produces very small cysts full of a serous liquid and placed in linear, circular and concentric arrangements. In-between, the skin looks healthy; the cysts [182] are not surrounded by any visible inflamed zone. There is no heat or redness. [Fig. 14]

Then the cysts grow slightly and dry up, forming scaly crusts which follow the contours of the early pattern. But the circular shapes are no longer clear, for the initial lesions have converged in many areas across the stretches of healthy skin. This is how the large exfoliating scabs are formed which characterize the second stage of the disease.

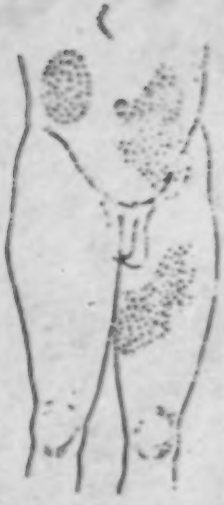
The third stage is brought about in the same manner. The scabs develop side by side; they eventually unite, and the scaling becomes generalized. In addition, the scales grow considerably in size as the final stage of the disease reaches its climax.

The affected person becomes repulsive.

One Indian woman had a multitude of scales standing all over her body, like strips of dark tissue paper fastened to the skin at one end.

7: Roquette-Pinto--&A E-4, 5 (no date) 1938 SP17 Nambicuara SP17 (ca. 1912)

164 [182]



Báanêcêdútú--First stage of the Serra do Norte skin disease (sketch).

964 These papery scales cannot be removed easily; I noticed that they did not come off when the woman scratched herself. I believe that the itching is much less severe at this time; it seemed more intense during the initial stages.

I cannot be definite about the time span of the disease. The symptoms evolve in a few days from the first to the second stage, but the latter seems quite prolonged.

[183] Some of the scabs contain incipient papery scales. However, as I had the opportunity to see only one woman and one girl, her daughter, whose bodies were entirely covered with the lesions of the last stage, I believe that the disease does not always reach this point. It may remain stationary at the second stage, or it may recede [involuir].

For the time being, therefore, I ascribe three stages to the disease:

(a) the cyst stage
(b) the scab stage
(c) the scale stage

I believe that these correspond to evolutionary phases of the same disease, and not to different diseases, because I found transitional forms on some of the affected individuals.

Besides, [the Indians] indicated by means of very clear signs that the final symptoms began with the cyst stage, the only one found in nursing children.

[157] The Indians spread saliva on the scabs; we do not know yet
[178] whether they use any herb against the disease. They probably do, for veritable herbariums were found in their villages.

302 751 Another question that remains to be solved is the possible effect on the disease of the Indians' custom of painting their body with a greasy paste made from the juice of the urucu seeds. (1)

[113]

1. Alvaro Osorio de Almeida (in the Boletim do Museu Nacional, Vol. 7, 1931, No. 1) studies the reactions of skin painted with urucu to the actinic rays of light and to solar heat. His experiments led him to the following conclusions:

"Once smeared with urucu, the

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Indians are as well protected against the actinic action of the sun as if they were wearing the thick clothing of the Sahara tribes. Because they are nude, however, the air circulates freely around their body, reducing the heat and hastening the evaporation of perspiration.

"If exposed to sunlight, in accordance with the property described above, urucu absorbs only slightly the heat of the sun, reflecting the red rays and also the heat rays. For this reason the white man or one with slight pigmentation, when smeared with urucu, does not perspire excessively as does the Negro under the same circumstances.

"In view of the properties ascribed to urucu by our experiments, and of the widespread usage of this dye among the Indians of tropical America, we believe that it should be considered not as merely ornamental but as an effective means of protection against tropical light and heat."

● 164 [184] The manifestations and evolution of the disease lead us to believe that it is a dermatomycosis. The habitat of the pathogenic fungus is probably to be found in the soil. This would explain why the personnel of the Line, who have lived among the Nambicuara for years, have not yet contracted the disease. This also applies to the Parecis, [213] who are now in contact with the diseased Indians. Both groups, unlike the Nambicuara, make use of hammocks and never sleep on the ground.

To this day, no microscopic examination of the scales has been made, and I am not responsible for this failure. In 1912 the Indians [223] would not allow us to collect the necessary materials; they were still suspicious.

164 The aboriginal name for this disease in the Serra do Norte is bãanẽcẽdũtũ. I believe that the word refers to the curvilinear shape [125] of the lesions, for bãanẽndũtũ is the generic name given by these Indians to the spirally constructed gastropod shells.

The above will suffice to indicate that this pathological manifestation had not yet been described among Brazilian aborigines.

Some of the skin diseases peculiar to our Indians bear no similarity to the bãanẽcẽdũtũ of the Serra do Norte.

The following diseases may be disregarded at once [as possibly related forms]: yaws [pian], mange [curub], pinhã, munga, pareb, xerodermae (ichthyoses), leishmanioses, etc.

[Page of plates p. 184.]

[185] Pereb is the Tupian name for commonplace skin boils such as those caused by staphylococcus.

Pinhã was found among some Amazon Indians by Martius. It is probably a kind of furuncular disease. Martius considered it a sort of anthrax.

Yaws is now well known; as far back as 1558 it was admirably described by Thévet, and in 1578 by Jean de Léry. In 1613 the learned priest Yves d'Evreux masterfully pointed out its likeness to the "Naples disease." The Indians of the Serra do Norte exhibit nothing of the sort.

It should also be noted that they do not know leprosy or the leishmaniosic sores which afflict the personnel of the Telegraph Line.

I did not see a single Indian afflicted with malignant sores [feridas bravas], while the infirmary at São Luiz de Cáceres overflowed with victims of the disease who came from the camp.

Nor does the Nambicuara disease bear any similarity to the skin disorder of the "Antisian" Indians (Mosetene, Tacana, Yuracare) who live on the eastern watersheds of the Andes in Peru and Bolivia.

The hombres overos, as the Spaniards named these Indians, exhibit large, irregular, whitish patches of unclear contours, located chiefly on the joints.

D'Orbigny states that these spots never have a grainy appearance; that children are spared; and that the skin of those affected remains completely smooth.

7: Roquette-Pinto--9A E-4, 5 (no date)1938 SP17 Nambicuara SP17
(ca. 1912)

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Indian woman of the Serra do Norte

Skin disease of the Serra do Norte Indians (unretouched photograph)

Nambicuara Indian

Tawite Nambicuara

7: Roquette-Pinto--10 E-4, 5 (no date)1938 SP17 Nambicuara SP17
(ca. 1912)

164 [171] The disease of the overos is in fact equivalent to the vaurana of our Tupian Indians, and actually the same as the "Carate disease" of Colombia, the "spotted disease," lota in Central America or purupuru in the Amazon.

164 114 [186] Spix and Martius at the beginning of the last century, and after them other naturalists, found the disease spread out through the great valley. Many chroniclers dealt with it, Baena in greatest detail.

"Purupuru," [wrote Spix and Martius], "is the name given by the Brazilians to those Indians who are really called Pamaouiri and who live on the Purus River."

They described the disease of the "Pamaouiri" (or Paumary as they are called today), listing as its major characteristic the presence of irregular skin spots, isolated or converging, blackish, and somewhat coarse to the touch.

Martius believed that some white spots occasionally found among the black ones represented the initial stage of the disease.

He thought that purupuru was hereditary, although its external manifestations appeared only after puberty. The Indians Martius met attributed the disease to "a bad condition of the blood"; and the naturalist believed that the "amphibious life" of these people, their food and some of their customs had a great deal to do with the coming forth of purupuru.

Later, through dissemination of the disease, the name came to designate all the tribes of the Purus-Juruá region: Paumary, Yuberi, Arua, etc.

About twenty years ago, Ehrenreich noted certain curious facts about the manifestations of purupuru. He confirmed that the disease only develops after puberty. He found some Indians whose feet and hands were entirely white, giving the impression of a partial albinism or a kind of vitiligo.

According to Ehrenreich, the spots have a grayish blue color in the first stage of the disease. As the edges whiten, the center becomes darker.

[187] He personally never observed the scaling of affected areas. But he relates popular reports to the effect that the Paumary

164 secretly mix the scales from their skin with the food and water of their
114 neighbors so that the disease may affect them too.

He adds that no hair grows on the white spots. The itching is always intensive.

In 1909, Koch-Grünberg wrote of the purupuru found in the valley of the Rio Negro. In accordance with the Indians' views he distinguished three varieties of the disease, white, black, and red, depending on the predominant coloring of the spots. Koch-Grünberg says that the black spots are hard and coarse, the white ones smooth and similar in aspect to burns.

However, Oswaldo Cruz (1) stated in 1913 that there is no

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1. Oswaldo Cruz, Relatorio sobre as condições medico-sanitarias do vale do Amazonas [Report on the Medical and Sanitary Conditions of the Amazon Valley], Ministry of Agriculture (Rio, 1913).

justification for this division into three varieties. He considers the white spots to constitute a more advanced stage of the disease and to result from the elimination of skin pigment by an infectious agent.

Oswaldo Cruz also noted scaling around the black spots.

Already in 1886, Hirsch (2) had stated that pururpuru could only

[113]

2. A. Hirsch, Handbuch der historisch-geographischen Pathologie [Handbook of Historical and Geographical Pathology] (1886).

be a dermatomycosis. The studies of Montoya y Flores (3) and

[113]

3. J. B. Montoya y Flores, "Recherches sur les Caratés de Colombie [Studies on the Carate of Colombia]" (Paris, 1893); Archives de Parasitologie, Vol. 2; "Notes sur les Caratés" [Notes on the Carate], Ann. de Derm. et de Syphil. (1897).

164 [114] Oswaldo Cruz, though not yet conclusive, seem to justify this hypothesis.

[188] The Indians of the Serra do Norte live on tributaries of the Amazon, and consequently in the vicinity of the extensive area where purupuru has been found. Yet they are indisputably free from the disease. Their isolation has protected them.

Báanêcêdútú bears some similarity to ringworm (herpes circinatus) and also to tokelau (tinea imbricata).

[114] In 1897 Ehrenreich confused these two diseases and stated that they are frequent among the Indians of the tropical zone.

Ringworm, however, is not the same as tokelau, and these diseases are not widespread among the Indians. The latter's skin, exposed as it is to numerous disturbing factors present in the environment, is often affected by "artificial eruptions of internal of external origin" which might be confused in certain cases with parasitic diseases.

However, there is no doubt that the initial stages of the Serra do Norte skin disorder would resemble those of herpes circinatus, with their concentric circles of small cysts, if they did not lack the inflammation that goes with herpes.

Perhaps this symptom merely goes unnoticed, owing either to the thickness of the skin or to its scanty blood supply, absence of hair, small number of sebaceous glands, etc.

The subsequent manifestations of the Serra do Norte disease, however, preclude its identification with ringworm. In its final stage, the disease of the Nambicuara is much more similar to tinea imbricata.

The covering of the individual with long scales similar to strips of tissue paper, which I clearly observed among my Indians, is also ascribed to tokelau. In tokelau as in báanêcêdútú, moreover, there is no inflammation [189] around the lesions and the hairy parts are not affected.

Tinea imbricata also begins with cystic formations, but in the Nambicuara disease the transformation of the cysts into "systems" is much more irregular. Actually there are no true "scaling systems" as in tokelau, but rather scabs surrounded by scales so small that they have a grainy appearance.

164 Thus the true likeness between the two diseases only appears clearly in the last stage, when the elongated papery scales cover the whole body.

On the other hand, the symptomatology of the Serra do Norte disease bears no similarity to that of the Araguaia River tokelau which was described in 1903 by Dr. C. Paes Leme (1) and which Fritz Krause

[113]

1. C. Paes Leme, "Contribuição ao estudo do Tokelau [Contribution to the Study of Tokelau]," Doctoral Thesis (Rio, 1903).

failed to mention. The general symptoms reported [by Leme] are altogether lacking among the Serra do Norte Indians, whose ailment bears all the characteristics of a local disease.

For these reasons, I believe that bãanêcêdûtû is an exfoliating dermatomycosis, perhaps even a tinea akin to tokelau.

At that time it proved impossible to obtain materials for microscopic examinations. At present the situation is more favorable; the sick are becoming more trustful, and this makes it possible to carry out much more complex investigations.

I have examined [ornamental] bands and other objects which had long been in direct contact with the skin lesions. It is obvious that such observations are quite rudimentary, and I do not expect them to be successful. Should it prove possible to isolate a fungus from these objects, to cultivate it and innoculate it, I shall return to this interesting subject.

It is the task of specialists to complete and correct these notes, which merely attempt to record the clinical [190] aspects of a pathological manifestation found among some primitive Indians. Sooner or later, contaminated by alien infections which unfortunately they will be unable to avoid, they will exhibit similar disturbances in a different form, modified by the benefits and evils of civilization. (1)

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1. See Olympio da Fonseca Filho, "Afinidades parasitologicas e clinicas

105 Kiriri is another language which bears some similarity to the dialects of the Serra do Norte.

8. In addition to linguistic affinities, the Serra do Norte Indians present certain ethnographic traits peculiar to the Ge-Botocudo tribes and rarely found among Indians of other groups: unfamiliarity with navigation and the hammock, absence of pottery, screens of leaves and branches, etc.

This being the case, the Serra do Norte Indians (Nambicuara) add a western link to the chain [314] of Ge peoples whose westernmost representatives had been until now the Suya.

9. The Nambicuara have been neighbors of the Paressi for centuries but have been influenced only slightly by that tribe. The two cultures kept evolving side by side, at different stages of development and with little interaction.

10. Agriculture arose early among the Serra do Norte Indians; this seems to have resulted from the demands of the geographical environment. It is almost certain, however, that the rise of this activity was conditioned by alien influences, not yet known, which provided the opportunity to acquire the necessary materials; for the species encountered among the Nambicuara are the same as those cultivated by other inhabitants of the region.

11. From the standpoint of physical anthropology, the Serra do Norte Indians are completely distinct from their neighbors. Those American Indians who come closest to them in terms of anatomical characteristics are the Nu-Arawakan.

12. The Serra do Norte Indians are affected by a special skin disease . . . which is unknown to their neighbors . . . [and] probably a variety of tinea imbricata.

UCL 137 13. Their main parasites are Siphonaptera (chigoe, (1) believed

1. Tunga penetrans.

to be of African origin but definitely a species of tropical America); and Hemiptera of the Pediculus humanus species, which are found among all the world's peoples. [Plates, p. 264.] [315] Perhaps this particular insect should be considered a variant on account of its size.